

Psychological

Monographs

General and Applied

**Quasi-Therapeutic Relations in Small
College and Military Groups**

By

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and Joan S. Dodge**

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Price \$1.00



Edited by Norman L. Munn

Published by the American Psychological Association, Inc.

473
959

Fiedler, Hutchins, and Dodge

Vol. 73
No. 3

Psychological Monographs: General and Applied

Combining the *Applied Psychology Monographs* and the *Archives of Psychology*
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QUASI-THERAPEUTIC RELATIONS IN SMALL COLLEGE AND MILITARY GROUPS¹

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THE INVESTIGATION here reported deals with the relation of interpersonal perception to level of adjustment and to change in adjustment.

Previous research has shown that some people characteristically see comparatively more similarity between themselves and their associates than do others, and that the attitude reflected by these interpersonal perceptions represents an important variable in interpersonal relations. For example, differences have been found in the perceptions of schizophrenic and normal individuals (Jackson & Carr, 1955). Similarly, one study has shown that reputedly good therapists perceive their patients as more similar to themselves than do reputedly poor therapists (Fiedler, 1951). The present studies relate these phenomena of interpersonal perception to personality adjustment of members of small groups.

Clinicians and personality theorists lean heavily on projective theory and perceptual

phenomena in attempting to understand and diagnose personality structure and dynamics. We ask, for example, how effectively various interpersonal attitudes differentiate the well from the poorly adjusted individuals. Since certain of these attitudes appear to be characteristic of relatively good therapists we ask whether these are intrinsically therapeutic attitudes, that is, will we find increased adjustment to occur in any interpersonal situation in which these attitudes play a part? If so, this should permit us to differentiate between a psychologically healthy, "quasi-therapeutic" relation and an interpersonal environment which is detrimental to adjustment.

There is clearly a considerable need for research in this area. As our society has become more complex and the individual's position in it less stable and secure, it has also become more difficult for many to maintain personal adjustment. Although this is due partly to our greater awareness

¹ This research was conducted under Contract DA-49-007-MD-569 between the University of Illinois and the Human Resources Branch, Research and Development Division, Office of the Surgeon General, and constitutes Interim Technical Report No. 7 of the Project "The Influence of Interpersonal Relations on Effectiveness and Psychological Adjustment of Group Members." Reproduction in whole or in part is authorized for any purposes of the United States Government.

We are deeply indebted to the many who collaborated with us on the collection and treatment of the data, as well as to those whose assistance and support during the various phases of our work made these investigations possible.

Of the project staff, R. E. Jones, Dorothy McBride Kipnis, Betty F. Mannheim, Margaret Reeves Rich, C. F. Wrigley, W. A. Cleven, E. R. Ostrander, Eileen Golb Potter, J. S. Terwilliger, and Audrey Vetter worked with these data at various phases of our research; L. J. Cronbach, N. H.

Eisen, D. W. Fiske, and Eleanor Godfrey served as consultants to the project.

We wish to express our thanks to Melvin Manis for permission to use his data, to F. H. Turner and C. S. Sifferd of the University of Illinois for permission to conduct research in the Men's Residence Halls, to L. Dyke and W. M. Gilbert for giving us access to counseling and health center criterion data; to L. E. McDonald and T. R. Vallance, then of Human Research Unit No. 1, Fort Knox, for assistance in testing tank crew members; and to M. S. Carter and his staff as well as to L. J. Davis, A. Kramer, P. Petrilli, Donald Ellis, and C. V. Robbins for permission and cooperation in testing members of the Fifth AAA Regional Command.

We are especially grateful to David McK. Rioch, of the Walter Reed Institute for Research, and C. S. Gersoni for their support, advice, and liaison which enabled us to conduct this work.

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of mental disorders, our society may also be less favorable to the maintenance of mental health. In any case, the demand for mental hospitals and for professionally trained counselors and therapists can no longer be filled, and we must therefore look for methods which prevent or alleviate psychologically maladjustive processes before they need extensive professional intervention. This requires (a) that we identify the individual who is unable to cope with his environment and (b) that we either place him in an interpersonal situation where he will be able to adjust, or that we help him to modify his interpersonal relations to facilitate his adjustment.

This issue is of particular importance in organizations such as the armed forces, colleges, and industry. Here a large number of people must frequently work under conditions which are psychologically stressful and disturbing. An understanding of the group factors which enable the individual to adjust or which, on the other hand, are detrimental to his adjustment, is thus of practical as well as of theoretical significance in our society.

Background of the Research

This research extends a number of previous studies by the senior author. The first of these compared the therapeutic relationships established by a group of expert therapists with those of nonexperts from various orientations or schools of psychotherapy. Four psychoanalytic, four non-directive, and two Adlerian therapists participated in the study. Half the members of each group were nationally recognized experts; the others, although they had received all or most of the training required by their "schools," were relative beginners. The results indicated that the experts created therapeutic relationships which were more similar to a generally accepted "ideal relationship" than did the nonexperts. In addition, the experts' relations were more similar to those of other experts than they were to the nonexperts within their own theoretical orientations. The study suggested, therefore, that experts differed from nonexperts primarily in type of therapeutic relationship which they established (Fiedler, 1950a, 1950b).

A second series of earlier studies involved the investigation of therapists' perceptions of their patients. Twenty-two therapists from a large mental hygiene clinic participated. They differed widely in their competence and experience, ranging from highly experienced therapists to relatively inexperienced ones. Each therapist was asked to

describe himself and one of his patients by means of Q-sort technique. Results showed that the reputedly good therapists tended to see more similarity between themselves and their patients than did their less highly rated colleagues (Fiedler, 1958). A further study by Fiedler and Senior (1952) showed that patients of good therapists tended to idealize³ their therapists more than did patients of relatively poor ones. These studies raised the question of whether the attitudes reflected by assumed similarity would lead to similar results outside the therapeutic situation.

A subsequent investigation of 26 men living in a fraternity house added further to our understanding of Assumed Similarity (AS) scores. The subjects (Ss) described themselves, and they predicted the self-descriptions of the person in the group whom they liked best, and the person whom they liked least. As hypothesized, Ss assumed significantly more similarity to their most preferred person than to the one whom they preferred least.

This relation between AS scores and sociometric preference suggested that AS scores measure along a psychological distance dimension. High Assumed Similarity toward a specific other is presumed to indicate a feeling of warmth, closeness, and acceptance toward him. Low Assumed Similarity, on the other hand, reflects a relatively cold, critical, and rejecting attitude. A number of studies have recently supported this interpretation. Thus, Hausman and his associates⁴ conducted an extensive interview and questionnaire study on 172 West Point cadets. They found that cadets who had closer relations with their fathers than with their mothers assumed themselves to be more similar to their fathers, while the reverse was true for men who were closer to their mothers. Steiner and Peters (1958) found persons with high AS to be more conforming and also more concerned with the feelings of their partners. These and similar studies (Davitz, 1955; Fiedler, 1958; Lundy, Katovsky, Cromwell, & Shoemaker, 1955; Precker, 1952) strongly suggested that interpersonal perception scores measure highly important aspects of the interpersonal relationship.

Empirical data and clinical evidence of the importance of acceptance and permissiveness on the part of therapists led to the hypothesis that high AS in social relations is related to good adjustment and that it is conducive to improvement in adjustment. Underlying our approach was the assumption

³ Idealization was measured in terms of the correspondence between the patient's ideal-self description and his prediction of the therapist on the same questionnaire items.

⁴ W. Hausman, B. T. Wiest, and R. Sandison, U. S. Army Hospital, U. S. Military Academy, West Point, N. Y.

tion that personality is a product of social interaction and that any set of interpersonal relationships can potentially lead to changes in personality (cf. Witmer & Kotinsky, 1952). Hence, any relationship may be potentially therapeutic or detrimental to adjustment.

In summary, the present study explored certain factors in day-to-day relationships which might be associated with good adjustment and with change in adjustment in order to determine how one individual, or a group of them, can affect another's ability to cope with his environment.

Aims of the Present Research

Our first aim was to discover the relation between interpersonal perception and level of adjustment at a particular time. While it is currently assumed that such a relationship exists, there are few studies which have, in fact, attempted to provide evidence of this relationship or to establish the magnitude of the relation. Our second aim was the investigation of informal quasi-therapeutic relations among members of small face-to-face groups. It was based on the hypothesis that certain aspects of these relations, measured by AS scores, are conducive to change toward better adjustment.

METHOD

Measuring the effect of interpersonal relations on personality adjustment presents a variety of methodological difficulties. Personality changes are readily observable in children and adolescents or in individuals who have suffered brain damage or severe psychological deprivations. Changes occurring in normally functioning individuals—that is, in nonclinical groups—are at best very subtle phenomena which occur slowly and almost imperceptibly. Even deliberate attempts to change personality, such as in psychotherapy on the one hand and "brainwashing" on the other, require as long as one, two, or three years. In contrast, we attempted to identify modifications in personality which were not deliberately induced, and which took place in a time period of weeks rather than years.

Furthermore, our primary interest centered on effects which were general rather than those which might be specific to one group or one situation. For these reasons, our tests had to be limited to determining whether or not a relationship exists, and whether or not changes did in fact take place, rather than estimating the magnitude and permanence of the changes.

The Samples

The over-all plan of the investigation required the comparison of two samples of student groups and two samples of military units. During the first year of our work, we utilized data which had been collected on university students housed in 14 dormitory suites⁵ ("The dormitory groups"). In addition, we collected data on members of 40 army tank crews ("The tank crews"). During the second year, the original procedures for data collection and criterion development were repeated, as far as possible, on two further samples of Ss. These were students housed in 13 separate temporary barracks ("The barracks groups") and on members of 53 anti-aircraft artillery units ("The anti-aircraft artillery crews").

To permit the measurement of change over time, as well as adjustment at a particular period, Ss were tested twice. In all but the "old" anti-aircraft artillery units the first testing occurred shortly after the group members had become acquainted with one another. The Ss were tested a second time after the relationships had become more clearly structured (see Fig. 1). To increase the readability of this discussion, the two studies on college students are described first, the two on military units, later.

The dormitory groups. These were 14 groups of 107 male college students living in a new university dormitory. Most Ss had entered the college at the beginning of the semester in which the data were collected. About half the students were freshmen, the remainder being transfer and incoming graduate students. Most Ss lived in rooms accommodating four men. Two rooms were generally joined

⁵ These data were collected by Melvin Manis for his dissertation (Manis, 1955). We are indebted to him for the raw data of this study.

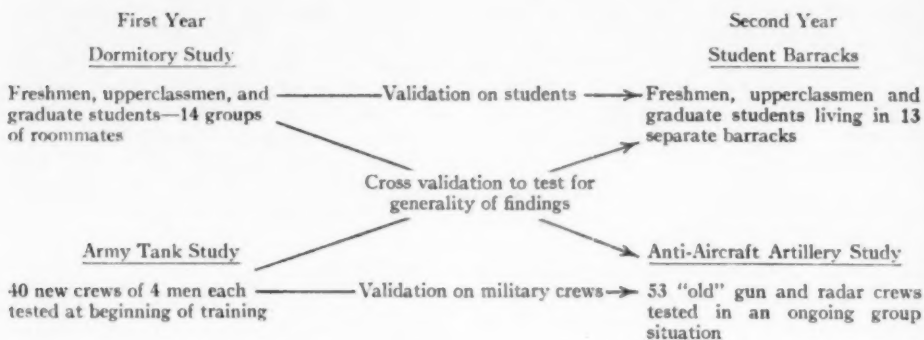


FIG. 1. Schematic representation of the over-all research plan.

to form a section which constituted the unit of our study. The *Ss* were assigned rooms in order of their application for housing and very few had known each other before the start of the semester. All were tested during the fifth week of the semester and again during the eleventh week. Our analyses were based on 87 *Ss* for whom complete data were available. Due to illness or withdrawal from school the remaining *Ss* were unavailable at the time of the second testing session.

The barracks groups. Data similar to the above were collected on a sample of 172 upper-class and freshmen students living in 13 temporary barracks. Each barracks, which was divided into four-man suites, held a maximum of 16 men. Analyses were restricted to 101 freshmen for whom complete data could be obtained. These *Ss* were tested during the third and twelfth weeks of the semester.

The tank crews. This part of the investigation was conducted on members of a tank battalion during the crew training phase. Each crew consisted of five enlisted men who were new to each other and to the particular type of tank training. Average age of the 160 men initially tested was 22 years, 49 were married and three were divorced. Average education was 9.7 years; mean Army General Classification Test score was 90. This group was, therefore, considerably more heterogeneous than the college student groups. Attrition due to transfers, discharges, overseas levies, and other causes reduced the retest sample size from 160 to 95 men.

The anti-aircraft artillery crews. In contrast to the tank crew members who were mostly recruits in training, the last group of *Ss* came from "old" operational anti-aircraft artillery units. These men were no longer in their initial training period, but were performing their regular duties within the Air Defense Command. Units varied in size from six to fifteen men. As with tank crews, the loss of data, due to furloughs, sick calls, overseas levies, or personnel turnover, was considerable. In the

12-week period between testings, the original sample shrank from 483 men to 200 for whom complete data were available. Our analyses were based on this group of 200 *Ss*. Here again there was considerable heterogeneity among *Ss*. The average age of the men, all of whom were enlisted, was 23 years, 36 were married; average education was 11.2 years; and the mean Army General Classification Test score was 101.

It is obvious from the attrition rates in our samples that it would have been impracticable to extend the time between testing sessions. Even in the much more stable college populations, an attempt to carry the investigation beyond one semester's duration was completely frustrated by the number of students who had left school, moved to new quarters, or who, for other reasons, were no longer available for testing.

Measurement of Interpersonal Relations

On the basis of previous work on psychotherapeutic relations, we considered two kinds of indices. These were (a) sociometric preference ratings and (b) measures of psychological distance, viz., AS scores.

Sociometric indices. Sociometric rating forms were designed for two purposes. First, we wanted to identify for each *S* the "significant others" in the group. Specifically, we wanted to determine the persons with whom *S* might have a quasi-therapeutic relationship. Secondly, we wished to determine each *S's* sociometric status. This latter purpose in collecting sociometric ratings was to provide some indication of *S's* personal adjustment and will be discussed in the next section of this report.

Sociometric scores index an individual's overt attitudes toward another. They indicate the extent to which one person prefers another by asking him to name two or three individuals in the group with whom he would prefer to associate in a variety of activities. In these studies hypothetical activities ranged from choices for week-end guests to those for combat leaders. The forms varied somewhat from sample to sample to make the questions appropriate for the particular group under study. Thus, while selection of a good study partner might materially affect one's progress in college, this question would not be appropriate for members of anti-aircraft crews.

The questionnaires were designed to identify *S*'s "Best Friend" (F), the person most frequently chosen in response to the various questions, and a quasi-therapeutic figure, here called the "Confidant" (C). The latter was defined by the question, "If you had some personal problems you wanted to talk over with someone in your group, with whom would you most likely discuss them?" It should be noted here that the confidant was simply the person whom *S* chose in response to this question. The confidant need not, in fact, have acted in this capacity. Where we asked *S*s who had come to them with personal problems, we found that some persons named as confidants were not consulted, and that some who had actually been asked for their advice did not recognize this fact (see Appendix A and Appendix B for sociometric questionnaires).

There was, of course, considerable overlap between confidant and friend choices. This was inherent in our definition of the "best friend" as the person who was sociometrically most preferred. This individual was quite likely to be chosen as a confidant as well. As Table 1 shows, the overlap is between one-half and two-thirds of the choices, except in the case of the tank crew study. Here, the groups were so new and the personnel changes so great that socio-

metric choices were probably quite unstable as compared with those obtained in the other samples. Two percentages are given for each study since confidants or friends identified by *S* were not always from *S*'s group and *N*'s therefore varied.

Measurement of assumed similarity. Assumed Similarity scores measure attitudes which are generally below the surface, attitudes of which the individual is, himself, frequently unaware. They are obtained when we ask a person to describe himself on a set of items descriptive of personal attributes and then using the same test items to describe others. Previous studies have shown that the item content plays a relatively slight role in the measurement of AS (Fiedler, 1958).

The scale sheet used in the dormitory study contained 24 items which were based on Cattell's (1950) factor analysis of Allport and Odbert's list of adjectives used by English-speaking people in describing themselves and others. The 24-item tests were subsequently modified and a 20-item scale sheet was utilized in the three later studies.

The form of the items followed that of Osgood's Semantic Differential (Osgood, Suci, & Tannenbaum, 1957). While other test formats have been used for obtaining AS scores, Osgood's appears to be most efficient. Items consisted of six-point scales bound by pairs of adjectives and their antonyms (see Appendix B). A seven-point scale was used in the dormitory study (see Appendix A). Examples of these items are as follows:

Friendly $\sqrt{\quad}$: : : : : Unfriendly
Cooperative $\sqrt{\quad}$: : : : : Uncooperative
Stable $\sqrt{\quad}$: : : : : Unstable

The *S* described himself (or another person) by checking the space in each scale which most adequately represented his judgment of that person. Approximately two to three minutes were required for the completion of a 20-item scale sheet.

Items were identical for each description *S* made. Following appropriate instructions he described: (a) himself; (b) himself as he ideally would like to be (his ideal self); (c) three or more close work companions; and (d) his confidant.

Computation of AS scores. Assumed Similarity scores require the comparison of two scale sheets to determine the profile similarity of the two descriptions.

In the preceding illustration of the scales, assume that the check marks might represent an *S*'s self-descriptions. Thus he would

TABLE 1

OVERLAP BETWEEN SUBJECTS' FRIEND AND
CONFIDANT CHOICES IN THE VARIOUS STUDIES

Study	Friends Who Were Also Confidants (%)	Confidants Who Were Also Friends (%)
Dormitory	60	65
Barracks	54	65
Tank	37	24
Anti-aircraft artillery	41	67

have marked the three items at Points 1, 2, and 2. Assume that he described his co-worker by marking the corresponding items at Points 5, 4, and 6 as presented below.

Item	Description of self	Description of other	Difference between self and other	Difference squared
Friendly	1	5	4	16
Cooperative	2	4	2	4
Stable	2	6	4	16
$\Sigma D^2 =$				36
$D = \sqrt{\Sigma D^2} =$				6

D , the statistical measure of profile similarity used here, is then obtained by extracting the square root of the sum of the squared item differences (Cronbach & Gleser, 1953). In this case, the squared differences would be 16 on the first and third items, and four on the second, yielding a sum or D^2 of 36. D thus equals six. Note that the amount of similarity assumed by the rater is inversely proportional to the size of the D score. The more a person sees another as resembling himself, the more the two descriptions will coincide and the smaller will be the D score.

Assumed Similarity scores can be computed between any pair of scale sheets an S fills out. In the present studies we concentrated primarily on those scores which might be related to quasi-therapeutic interactions. The most important of these, as Mannheim (1957) has shown, reflects the interaction between the individual and his group. They indicate how close the individual feels to the members of his group, and to what extent he is accepted by them. Similarly, Asch's (1952) studies on conformity behavior have shown that the opinion of the group is an extremely important factor in changing the individual's attitudes and thinking. In the present study we therefore used two average AS scores to and by the group as the main predictors. The first of these, S 's average AS to the members in his group (\overline{ASg}), indexed the degree to which S felt close to, and identified with, those with whom he lived and worked. The

second, the average AS of group members toward the subject (\overline{ASs}), indicated the extent to which he was seen as one of the group, i.e., the extent to which he was accepted by its members. These scores, being averages, were also quite reliable.

We had planned to work with four additional scores which were expected to predict adjustment and changes in adjustment. These were the individual's acceptance and idealization of his confidant, and his confidant's acceptance and idealization of him. (Idealization was operationally defined as the D score between the S 's ideal self and his description of another person. It indicates how closely S sees the other as resembling S 's own ideal.)

The relationship between the subject and his confidant was the nearest analogue to the patient-therapist relationship with which our data provided us. We had therefore expected that this set of indices would yield the best predictions. However, these scores, as will be shown later in Table 3, were highly correlated with \overline{ASg} and \overline{ASs} ; they were not treated as main predictors in these studies.

We also wished to determine whether it was the confidant relationship which had special significance, or whether any close relationship with another "significant" person would serve the same function. To determine this, indices analogous to confidant relationships were computed for S and his best friend. The indices used are summarized below:

Symbol	Interpretation of AS Score
\overline{ASg}	Average similarity which S assumes between himself and other members of his group with whom he has close working or friendship relations.
\overline{ASs}	Group members' average AS to S , indicates the extent to which S is accepted by others in his group.
ASc	S 's AS to his confidant. S 's psychological distance from the person he chooses as potential confidant.
$ASic$	S 's idealization of his confidant, i.e., the similarity S assumes between his ideal self and his confidant.

Symbol	Interpretation of AS Score
ASf	S's AS to his "best friend," i.e., the similarity <i>S</i> assumes between his most preferred group member and himself. This score was obtained to compare friendship with confidant relations.
ASIf	S's AS between his ideal self and his "best friend." Score obtained to compare confidant and social relations.
C's ASs	Confidant's AS toward <i>S</i> , indicative of his acceptance of <i>S</i> .
C's ASIs	Confidant's idealization of <i>S</i> .
F's ASs	Friend's AS toward <i>S</i> , his acceptance of <i>S</i> .
F's ASIs	Friend's idealization of <i>S</i> .

Reliability and Intercorrelations of AS Scores

Table 2 presents the internal consistencies of the various scores which were used in this investigation. The coefficients were obtained by Guttman's split-half method. Table 3 presents the intercorrelations obtained in the four studies. To simplify the table we have presented median correlations. Thus, AS*c* and AS*Ic* which listed as .64 in Table 3 is the median of .66, .30, .62, and .72 for the dormitory, barracks, tank, and anti-aircraft artillery studies, respectively. This matrix is further summarized in

TABLE 2
RELIABILITIES FOR TEN PREDICTOR SCORES
IN THE ANTI-AIRCRAFT ARTILLERY SAMPLE
(Time I Scores)

Symbol	<i>r</i>	<i>N</i>
<i>S</i> 's AS to Others		
AS <i>c</i>	.79	200
AS <i>Ic</i>	.79	200
ASf	.81	145
ASIf	.83	145
AS <i>g</i>	.86	200
Other's AS to <i>S</i>		
C's ASs	.78	89
C's ASIs	.85	89
F's ASs	.84	145
F's ASIs	.89	145
ASs	.84*	168

Note.—*r*'s are corrected by the Spearman-Brown prophecy formula.

* Estimated from C's and F's AS*s* scores and the split-half reliability of group members' AS scores.

Table 4 which also indicates the presence of two distinct clusters of AS scores: (a) scores obtained from the same *S* about others and (b) scores obtained from others about a particular *S*. It should be noted that the scores within each cluster are mathematically related to one another and the intercorrelations are, therefore, artifactually high. For example, the average scores, AS*g* and AS*s* are based in part on AS*c* and ASf on the one hand, and C's ASs and F's ASs on the other. Furthermore, the AS*c* and AS*Ic* scores are interrelated since both are based in part on *S*'s description of his confidant. This made it advisable that we restrict our main analyses to the unfounded and independent scores, AS*g* and AS*s*. The remaining scores are presented for illustrative purposes.⁶

CRITERIA OF ADJUSTMENT

This research dealt with individuals who were forced to live as members of groups. The *S*s were chosen because their group membership provided information which is difficult to obtain from the private clinic patient or from the individual who works and lives alone.

The ultimate criterion of adjustment has here been conceptualized in terms of the individual's ability to participate fully in his group. This ability has been called the individual's "staying power." Conversely, maladjustment has been defined as the extent to which the individual cannot, or does not, participate effectively in his interpersonal situation.

If a person is maladjusted by our definition of the term, he may withdraw by physically removing himself from the group, e.g., by being absent without leave, by evidencing psychoneurotic reactions which

⁶ As Cronbach has pointed out, AS scores are complex measures which might be more meaningfully interpreted by analyzing them into their component variances. While this method was not adopted in the present research, it seems very likely that a more refined approach of this nature would lead to better prediction and perhaps also to more precise interpretation of the results.

TABLE 3
MEDIAN PREDICTOR INTERCORRELATIONS FROM ALL FOUR STUDIES

	ASc	ASlc	ASf	ASlf	ASg	C's ASs	C's ASls	F's ASs	F's ASls	ASs
ASc		.64	.80	.48	.69	.12	.04	.05	.09*	.18
ASlc			.42	.59	.52	.19	.12	.06	.05*	.13
ASf				.59	.74	.03	.10	.09	.11*	.21
ASlf					.43	.06	.06	.10	.08*	.15
ASg						.03	.08	.05	.08*	.15
C's ASs							.68	.74	.38*	.46
C's ASls								.48	.80*	.50
F's ASs									.70*	.52
F's ASls										.48*
ASs										

* Based on 3 r's only.

limit his participation in group activities, or by manifesting the kinds of character disorders which make him personally obnoxious to other group members who then exclude him from full participation.⁷

Three classes of criteria reflect this notion of staying power. They include (a) subjective indices of adjustment, (b) indices based on group acceptance, and (c) objective or behavioral indices of personal effectiveness. The specific measures used in these studies are described below.

Subjective Indices of Adjustment

The extent to which a person feels well, the extent to which he feels able to cope successfully with his environment, is a most important aspect of adjustment. No matter how "sick" a person may be in the eyes of others, he will generally consult a therapist only when he, himself, feels the need for professional help. Although many an advanced schizophrenic has protested to his physician in the locked ward that he never felt better in his life, self reports by reasonably well-functioning individuals are clearly useful measures of their ability to get along in life. Two subjective indices of adjustment, self-esteem and self-satisfaction, were derived from the rating scales described earlier. Several others, based on more or less disguised adjustment inventories, were also obtained. These indices are discussed below.

⁷ Obviously, a well adjusted individual might not like a particular group, and he might try to transfer out of it, or he may be promoted. We assume here that such a person could have stayed in the group, if he had desired to remain.

TABLE 4
SUMMARY OF MEDIAN PREDICTOR INTERCORRELATIONS INDICATING TWO DISTINCT CLUSTERS OF S's AS TO OTHERS AND OTHER'S AS TO S

Study	S's AS to Others	Others AS to S	S's AS to Others by Other's AS to S
Dormitory	.60	.49	.20
Barracks	.36	.49	.12
Tank	.65	.71	-.01
Anti-aircraft artillery	.65	.62	.10

Self-esteem (SE). The score, SE, was the sum of S's self-ratings on each scale when the items were scored on a good-bad continuum. It indicated the degree to which S esteemed or valued himself. To calculate SE, the favorable pole for each scale was first determined. In the example given earlier, this appears at the left of each scale. We assumed that it is better to be friendly than unfriendly, stable than unstable, and cooperative than uncooperative.⁸

The favorable end of the continuum was arbitrarily scored lowest. Thus in the above example,

⁸ Three judges agreed unanimously as to which was the positive pole for all 20 scale items. This a priori determination of the "good" pole was empirically confirmed in the anti-aircraft artillery study. The S's responses on the ideal self-description were tallied and a frequency distribution made for each item. All but one of these distributions were highly skewed with the modes of each falling on the scale value previously assigned a "1."

a person marking the friendly-unfriendly scale at the point at which the check mark appears would receive a score of "1" on that item; he would receive a "2" on the second and third items. Since SE is the sum of the item scores, it would here equal "5." The lower the score, the higher the self-esteem.

Several studies have indicated a positive relation between the favorability of the self percept (or other self-report measures) and various criteria of adjustment (Brownfain, 1952; Murray, 1938). High self-esteem indicates that the individual values himself highly and sees himself as being adequate in terms of the cultural values. He describes himself as being characterized by the traits our culture considers desirable.

Self-satisfaction. A second index of the favorability of the self percept was the Self-Satisfaction score. This measured the correspondence between the descriptions of self and ideal self and thus indexed the degree to which an individual perceived himself as having the characteristics he most admired. A similar score has been used extensively by Rogers (1951) and by Rogers and Dymond (1954) as well as in earlier studies (Fiedler & Senior, 1952). These indicated that self-satisfaction is related to various adjustment criteria. In our own work, we found it significantly correlated with self-esteem. (The two scores are not mathematically independent, since both were derived in part from the same data, viz., *S*'s self-description.) The magnitudes of the correlations between the two sets of scores were not sufficiently high (median $r = .50$), however, to justify retaining only one.

Taylor Manifest Anxiety scores. In all but the dormitory study, a modified form of the Taylor Scale of Manifest Anxiety (Taylor, 1953) was administered. Rosenthal's (1955) findings support the clinical opinion that this scale measures overt signs of anxiety, and other studies have demonstrated that it has adequate reliability and validity (Cattell, 1950). After preliminary tests, 48 of the original items were chosen for inclusion in the present studies.

General Army Adjustment Index. This index, developed by Havron, Fay, and Goodacre (1951), is based on the assumption that an individual who is motivated to remain and succeed in the army is better adjusted to the military situation than is a person who wishes to withdraw. The scale taps such attitudes as one's willingness to go into combat, satisfaction with army training, feeling that the army assignment is worthwhile, etc. It was administered only to members of anti-aircraft units.

Group Acceptance Criteria

The second major aspect of adjustment we considered was the individual's ability to interact with others in a manner which was acceptable to the members of his group. Our data yielded two indices of this ability.

Sociometric status. To some extent, this operational definition of group acceptance tends to become confused with conformance to group norms and "other-directedness," although many studies have shown that sociometric status can be used as an adjustment measure. Typical are the findings of French (1951), and of Lemann and Solomon (1952). (See also Lindzey & Borgatta, 1954.) These results indicate a positive relation between sociometric choice and job performance as well as other criteria of personal adjustment.

The usual method for measuring this variable was followed. The *S*s were asked to indicate those in their group whom they preferred as roommates, combat leaders, etc. Choices given to an individual by the members of his group were summed and, to compensate for differences in group size, adjusted for the total number of possible choices. The higher the score, the more *S* was considered to be accepted by his group members.

Mean esteem by others (EO). This score was obtained from the rating scale descriptions which others in the group made of *S*. The method for calculating this score was identical with that used in computing the self-esteem index, except that the descriptions by others rather than *S*'s self-description were used. Since an *S*'s final score was the average of all descriptions made of him, the score in effect represented the group's estimate of the individual's adjustment.

Because of the size of some of the groups in our samples, it was not always feasible to have every person describe every other member of the group. In the barracks and anti-aircraft artillery samples, for example, as many as 15 men constituted a group. Thus, we asked every member to describe only the four men with whom he had closest work contacts. Some biasing undoubtedly occurred as a result of this partial sampling procedure. However, this effect was probably not very pronounced inasmuch as most men generally do not have much latitude in choosing their work partners.

Objective Indices of Personal Effectiveness

These criteria reflect the individual's success in attempting to adjust to his life situation. Thus, one essential aspect of adjustment for the college student is his ability to remain in school. Similarly, the adjustment of a man in a military unit must be judged in part by whether or not he can remain in his outfit. If he is beset by mysterious ailments, or if he gets court-martialled and must spend a year in the guard house, it

would be difficult to consider him well adjusted to army life.

Useful criteria of this nature are usually specific to the situation under consideration, e.g., school grades are meaningful only in a school situation, court-martial records only in the military services. Objective criteria applicable to all four samples could, therefore, not be obtained. The measures which we were able to obtain in the various samples are discussed below.

Health center visits. Data on the frequency and nature of the individual's visits to the health center were collected on both college student groups. University regulations required all students to undergo a physical examination at the time of their entrance to the university. Their medical history was recorded at that time, as were any specific disorders then present. Throughout the semester, each visit made to the health center was added to the student's record. The notation included the nature of the complaint, the diagnosis, treatment, and any pertinent comments the physician cared to make.

An unusually high frequency of visits was taken as one index of poor adjustment. With the assistance of the medical staff we attempted to differentiate Ss with symptoms of a psychosomatic nature (headaches, back pains, etc.) from those who had purely somatic difficulties (fractures, etc.). The presence of psychosomatic complaints was taken as a second index.

An analogous index utilizing sick-call visits was obtained from the tank study. (We were unsuccessful in obtaining adequate sick-call data from individuals in the anti-aircraft artillery sample.) For obvious reasons, this measure did not have the same meaning as it did with university students. There is a great deal of secondary gain for a soldier in reporting for sick call which enables him to avoid onerous details. This is, of course, not generally true in the case of students who have to take time out from classes, study periods, or extracurricular activities in order to visit the health center.

Counseling bureau visits. The university's student counseling bureau provided additional information regarding the psychological adjustment of Ss in the dormitory and barracks samples. The majority of students visited the counseling bureau at least once to learn the results of their performance on the freshman guidance examination. At that time, a counselor interviewed them and rated them with regard to the intensity of personal, educational, and vocational problems. On the advice of the counseling bureau staff, only the presence of personal problems was considered to indicate poor adjustment on this criterion.

While the rated intensity of the difficulty yielded one adjustment score, the number of visits provided another. Students who returned several times

for therapy were classified as maladjusted on this criterion. Generally, students who used the counseling bureau for more than the initial visit had also been rated by the counselor as manifesting severe personal problems. Thus, all subjects who consulted the counseling bureau more than once because of personal problems were classified as functioning below average, regardless of the nature of the difficulty. It seems reasonable to assume that students who consistently felt the need for such help in solving their problems were not as well adjusted as those who were able to manage their own affairs with a minimum of professional aid.

College grades. One criterion of personal effectiveness in college was the student's grade point average (GPA) for the semester under study. For better or for worse, a college student's adjustment is measured largely by how well he performs in his work at school. No matter how happy he may be, no matter how delightful his relationships might be with his roommates, his adjustment to the college situation as a whole must be considered unsatisfactory if he fails or gets kicked out of school. This is not to say that the student must necessarily graduate with honors to be considered adjusted, but a person who has scholastic ability, as shown by his high school performance and college aptitude test scores, yet fails to perform well, is not adjusting to the demands of his environment.

Disciplinary ratings. Adequate individual proficiency scores were not available in the military units. Except for sick calls in the tank study, ratings on disciplinary offenses, obtained in the anti-aircraft artillery study provided the only objective indication of the individual's ability to adjust to the army.

Reliability of Criterion Measures

Table 5 presents split-half reliability coefficients for all adjustment indices susceptible to this statistical treatment. (Adequate reliability estimates of indices, such as sick

TABLE 5
SPLIT-HALF RELIABILITY COEFFICIENTS OF
PERSONALITY ADJUSTMENT INDICES

Index	Sample	N	r*
Self-satisfaction	Barracks	169	.76
Self-esteem	Anti-aircraft artillery	415	.93
Taylor manifest anxiety	Anti-aircraft artillery	200	.91
General army adjustment	Anti-aircraft artillery	200	.73
Mean esteem by others	Dormitory	86	.70
Sociometric status	Dormitory	99	.94

* Corrected for length.

calls or disciplinary ratings, could not be obtained from the data at our disposal.) As relatively little variation was found from sample to sample, only one estimate is presented.

As the data show, self- and group-acceptance indices had sufficiently high internal consistency to serve as criterion measures for this study.

Intercorrelations Among Criterion Indices

Inasmuch as the problem of the interrelations among adjustment criteria has been dealt with more fully in a previous paper (Fiedler, Dodge, Jones, & Hutchins, 1957), detailed analyses are not presented here. Table 6 shows the intercorrelations among the criteria of adjustment that were used. With the exception of artifactual rela-

TABLE 6
INTERRELATIONSHIPS BETWEEN ADJUSTMENT INDICES OBTAINED IN TWO OR MORE STUDIES
(Time II Tables)

Index	Dormitory	Barracks	Tank	Anti-Aircraft Artillery
Self-satisfaction and:				
Self-esteem ^a	.60	.55	.36	.44
Sociometric status	.09	.09	.00	.10
Mean esteem by others	-.02	.15	-.14	-.09
Taylor anxiety ^b	—	.34	.37	.30
Health center	.00	.19	.10	—
Grade point average	.17	.30	—	—
Counseling bureau	.15	.16	—	—
Self-esteem and:				
Sociometric status	.20	.10	.04	.09
Mean esteem by others	.22	.09	-.20	.02
Taylor anxiety ^b	—	.25	.43	.34
Health center	.22	-.06	-.09	—
Grade point average	-.14	.28	—	—
Counseling bureau	.08	.22	—	—
Sociometric status and:				
Mean esteem by others ^c	.38	.42	.34	-.17
Taylor anxiety	—	-.09	.09	.04
Health center	.06	-.04	.02	—
Grade point average	.05	.31	—	—
Counseling bureau	.10	.00	—	—
Mean esteem by others and:				
Taylor anxiety	—	-.02	-.13	-.07
Health center	.15	.08	-.09	—
Grade point average	.03	.14	—	—
Counseling bureau	.23	.06	—	—
Taylor anxiety and:				
Health center	—	.16	.07	—
Health center and:				
Grade point average	-.10	-.06	—	—
Counseling bureau	.06	.02	—	—
Grade point average and:				
Counseling bureau	.03	.27	—	—

^a Spuriously high relation based on self-descriptions.

^b Both variables are self-descriptions.

^c Both variables based on descriptions by same others.

tions, the intercorrelations are quite low. On the basis of these data we concluded that adjustment could not be measured by means of a composite or global index. Rather, the results suggested that the measures indexed separate aspects of adjustment. Thus, our analyses dealt separately with each criterion score.

Table 7 presents the intercorrelations among change measures. Here again the data suggest that changes in personality take place piecemeal. Apparently we cannot, as yet, readily encompass "personality adjustment" by one composite measure. Nor, as the data further suggest, can we talk about personality adjustment as if it were a unitary trait or attribute of a person.

To facilitate interpretation of the data, the basic analyses are restricted to five "main" criterion variables. These variables were chosen: because an adequate estimate of their reliability could be obtained; because they were utilized in at least three of the four studies, thus providing some indication of the generality of the results; and because they could be obtained twice in each study, thus yielding change-in-adjustment scores.

The criterion scores which met these conditions were: (a) Self-Esteem, (b) Self-Satisfaction, (c) Taylor Anxiety Scores, (d) Sociometric Status, and (e) Mean Esteem by Others. Analyses related to criterion measures not meeting these requirements are reported as subsidiary findings.

RESULTS

This research program dealt with two main questions. The first of these considered whether people who are adjusted perceive others differently than do those who are less well adjusted, and whether they are, in turn, perceived differently. The second question concerned *changes* in adjustment. It asked whether an individual's perception of others or others' perceptions of him were related to subsequent modifications in his adjustment.

Relation of Assumed Similarity to Level of Adjustment: General Criteria

The nature of the relations between psychological distance and personal adjustment were investigated by correlating AS scores with various adjustment indices. Since we

TABLE 7
RELATIONSHIPS BETWEEN INDICES OF CHANGE IN ADJUSTMENT OBTAINED IN TWO OR MORE STUDIES

Index	Dormitory	Barracks	Tank	Anti-Aircraft Artillery
Self-satisfaction and:				
Self-esteem ^a	.46	.43	.18	.38
Sociometric status	-.11	-.10	.00	.08
Mean esteem by others	.15	.03	.09	.04
Taylor anxiety ^b	—	.26	.24	.08
Self-esteem and:				
Sociometric status	.08	-.14	.01	.04
Mean esteem by others	.00	.23	-.13	-.02
Taylor anxiety ^b	—	.23	.01	.09
Sociometric status and:				
Mean esteem by others ^c	.24	.09	.16	-.09
Taylor anxiety	—	.26	.05	-.03
Mean esteem by others and:				
Taylor anxiety	—	.04	.11	-.03

^a Spuriously high relationship—both variables self-descriptions.

^b Both variables based on self-descriptions.

^c Both variables based on ratings by same others.

were primarily interested in effects which are general over different situations, we dealt simultaneously with the relations obtained in all four studies by following a procedure for averaging and weighting each of the correlations by the size of the sample. This procedure yielded an index of the homogeneity of the various correlations over the samples (Edwards, 1950, pp. 133-141). Only where this homogeneity exists—that is, where χ^2 is *not* significant—is one justified in pooling the correlations over several samples. A significant χ^2 indicates significant differences between samples.

As will be recalled, the most general predictor variables were \overline{ASg} (*S*'s average AS to all persons whom he described in the group) and \overline{ASs} (the average amount of similarity assumed toward *S* by his fellow group members). The former is interpreted as indicating *S*'s general acceptance of his group members, the latter the degree to which he is accepted by them.

Table 8 presents the pooled correlations between the two main predictors, and the five main criteria. As can be seen, four of the seven correlations were statistically significant, with three of them (Taylor Manifest Anxiety and \overline{ASg} , Sociometric Status and \overline{ASg} , and Sociometric Status and \overline{ASs}) reaching the .01 level. All were in the expected direction. The first hypothesis was thus confirmed. It should be pointed out that Taylor Anxiety scores and \overline{ASg} are

psychologically related since both are dependent to some extent on the individual's self-perception. A person who perceived himself favorably on the self-description would also tend to describe himself favorably on the Taylor Anxiety scale. (The median correlation between favorability on self-description and Taylor Anxiety scores over the four studies was .34.) The self-description enters also into each of the scores reflecting assumed similarity to others. Hence, the findings, while significant, must be interpreted with some caution. (Parenthetically, we might point out that this same limitation holds whenever we intercorrelate any "objective" personality tests which are based on self-reports.)

It has been shown in previous studies that we assume similarity to people we like and esteem. A person who was liked by his peers and who was sociometrically chosen by them was also perceived as similar. The results are, therefore, in line with expectations based on previous work.

Of particular interest are the correlations between \overline{ASg} and Mean Esteem by Others, and \overline{ASs} and Taylor Manifest Anxiety scores. While these correlations are relatively low, they do indicate that *S*'s adjustment is related to his attitudes toward others, and others' attitudes toward him.

We next considered the relations between AS to, and by, *specific* members in *S*'s group. Table 9 presents the correlations

TABLE 8
AVERAGE CORRELATIONS (*r*) BETWEEN GENERALIZED AS SCORES \overline{ASg} AND \overline{ASs} AND THE
MAIN INDICES OF ADJUSTMENT
(Time I)

Index	<i>N</i>	\overline{ASg}	<i>N</i>	\overline{ASs}
Self-esteem	—	— ^a	501	.07
Self-satisfaction	—	— ^a	501	.08
Taylor manifest anxiety	425	.37**	414	.11*
Sociometric status	512	.04	501	.22**
Mean esteem by others	428	.15**	—	— ^a

Note.—Unless otherwise indicated, the χ^2 s for homogeneity of correlations over groups were not significant and have been deleted.

^a These correlations would be spurious and were therefore omitted.

* Significant at the .05 level.

** Significant at the .01 level.

TABLE 9

AVERAGE CORRELATIONS (r) BETWEEN S 'S TIME I AS TO CONFIDANTS
AND FRIENDS AND SCORES ON THE GENERAL ADJUSTMENT INDICES

Index	N	ASc	ASic	N	ASf	ASIf
Taylor manifest anxiety	282	.43**	.32**	231	.39**	.27**
Sociometric status	309	-.05	-.02	258	-.04	-.01
Mean esteem by others*	247	—	.12	218	—	.11

* $\chi^2 = 7.21$ (significant at .05) and 5.25 for ASc and ASf, respectively, indicating that correlations are not homogeneous and cannot be averaged.

** Significant at the .01 level.

between S 's AS scores to his confidant and friend, and the general adjustment indices. The only significant relations which can be meaningfully interpreted are those with Taylor Anxiety, all of which reached the .01 level. While not independent of one another, these relations suggest that individuals who idealize and assume similarity to those who are important to them are less likely to exhibit overt signs of anxiety.

Table 10 presents the correlations between criteria and AS toward the subject by specific others. Two of the eight relations involving confidant's AS scores were significant, as was one involving S 's best friends. These were the relations between confidant's or friend's perceptions of S and S 's sociometric status. Both of these relations were somewhat higher than \overline{AS} s and sociometric status. They suggest that the person who is well liked or highly chosen is more idealized by his confidant and/or friend than is the less chosen individual. Since the confidant's and friend's responses

comprise part of the individual's sociometric status score, the finding might mean that the popular individual is able to choose friends and confidants from among those who think highly of him, while the less popular person will not even be idealized by those whom he considers his friends or confidants.

Level of Adjustment: Analyses Using Specific Criteria

The major emphasis has thus far been on adjustment measures which were obtained on three or more of the studies. There were, however, a number of measures which, although specific to only one or two studies, provided some valuable information. These data are presented below.

Grade point average. The relations between students' college grades and AS were analyzed in both college student samples. Since tests are not given until after at least the sixth or eighth week of school, the AS scores are, in effect, predictors of perform-

TABLE 10

AVERAGE CORRELATIONS (r) BETWEEN CONFIDANT'S AND FRIEND'S TIME I AS
TO S AND S 'S SCORES ON GENERAL ADJUSTMENT INDICES

Index	N	C's AS	N	C's ASIs	N	F's AS	N	F's ASIs
Self-esteem	246	.01	245	.01	319	.02	236	.03
Self-satisfaction	246	.02	245	.04	319	.04	236	.08
Taylor manifest anxiety	162	.06	161	.01	235	-.01	236	-.06
Sociometric status	246	.14*	245	.30**	319	.07	236	.31*

* Significant at the .05 level.

** Significant at the .01 level.

ance. Table 11 presents the correlations between AS scores and GPA. As can be seen, the only significant relation in the dormitory study was that between GPA and subject's tendency to assume similarity to his confidant. Although this did not reach significance in the barracks groups, it closely approached it. Pooled, these correlations were significant at the .05 level. The main predictor, ASg, was significantly related to the criterion in the barracks study as was the tendency to idealize the best friend. Again these relations were not significant in the dormitory study, although the combined correlations were significant.

Obviously, grade point averages contain many sources of variance. We were, however, able to control for the student's native ability. The adequacy of his previous training, the competence and grading systems of instructors, and various other factors, all of which affect student performance, were uncontrolled. Since all of these contribute to error variance, the obtained correlations are probably somewhat lower than the true correlations. Thus, the data suggest that persons who assume similarity to others are more effective in their school work than are those who assume little similarity. Inasmuch as GPA is not known to the student

until fairly late in the semester, these correlations are predictive of adjustment as measured by this criterion.

Counseling bureau visits and student health center visits. In both college student samples, the number and nature of visits to the counseling bureau and student health center constituted adjustment criteria. Although there were scattered significant correlations between AS scores and these indices, no consistent relations were found.

Sick calls. Records indicating the number of times the individual went on sick call and the nature of his symptoms could be obtained on tank crew members. The men were housed in a fairly small geographical area, they were seen by their own medical personnel, and the policy regarding sick call was fairly uniform from unit to unit.

Table 12 presents the correlations between sick call visits and AS scores in the tank crew sample. As can be seen, the individual's acceptance of his fellow group members in general and his confidant in particular were significantly correlated with the frequency of his visits. Similarly, a person who was idealized by his friend tended to go on sick call less frequently than a person who was not idealized. All correlations were positive with exception of

TABLE 11
AVERAGE CORRELATIONS (r) BETWEEN GPA AND AS SCORES
IN THE DORMITORY AND BARRACKS STUDIES

AS Scores	Dormitory		Barracks		Average	
	N	r	N	r	N	r
ASg	87	.15	95	.22*	179	.19*
ASs	87	.00	85	.08	179	.04
ASc	87	.22*	95	.16	179	.19*
ASic	87	.17	95	.17	179	.17*
ASf	87	.12	73	.22	157	.17*
ASIf	87	.00	73	.32*	157	.15
C's ASs	87	.11	39	.09	119	.10
C's ASIs	86	.13	39	-.04	118	.08
F's ASs	87	.12	48	.24	123	.16
F's ASIs	—	—	48	-.07	—	—

* Significant at the .05 level.

TABLE 12
CORRELATIONS (r) BETWEEN SICK CALLS (TIME I)
AND AS SCORES IN THE TANK STUDY

AS Scores	N	r
ASg	90	.27**
ASc	95	.20*
ASic	95	.03
ASf	59	.21
ASif	59	.03
ASs	93	-.06
C's ASs	22	.38
C's ASIs	21	.37
F's ASs	24	.36
F's ASIs	25	.41*

* Significant at the .05 level.

** Significant at the .01 level.

ASs and sick call visits. In brief, the soldier who had closer relations with others appears somewhat less likely to go on sick call or to exhibit psychophysiological symptomatology than one whose relations were more tenuous.

General Army Adjustment Index. This index is basically a measure of personal morale and satisfaction with army life. Questions concern the possibility of reenlisting, having one's son become an army career man, feeling that one is performing an important job, etc. These questionnaires

were complete only for the anti-aircraft artillery crew members in our study.

Table 13 indicates that all AS-to-others scores were significantly correlated with this index. We concluded, therefore, that the perception of others as similar or dissimilar is related to adjustment to army life. The more the individual perceived others to be similar to himself, the better his adjustment on this criterion.

Disciplinary ratings. Next we obtained disciplinary ratings from each crew leader for every member of his crew. These ratings reflected the amount of "trouble" which a particular man gave his sergeant. A person who is a constant disciplinary problem is obviously not adjusting to the demands of military life.

The correlations between AS scores and these ratings are again presented in Table 13. Being perceived as similar by others (ASs) was significantly related to good adjustment on this criterion. The relationship with the confidant is of particular interest. Idealization of and by the confidant were associated with ability to adjust to military discipline.

Annoyance scores. Finally, in the tank crews we obtained information as to the

TABLE 13
CORRELATIONS (r) BETWEEN GENERAL ARMY ADJUSTMENT, DISCIPLINARY RATINGS
(TIME I), AND AS SCORES IN THE ANTI-AIRCRAFT ARTILLERY STUDY

AS Scores	General Army Adjustment		Disciplinary Ratings	
	N	r	N	r
ASg	200	.24**	200	.01
ASs	200	-.04	200	.19**
ASc	200	.22**	200	.12
ASic	200	.34**	200	.16*
ASf	200	.17*	200	.04
ASif	200	.28**	200	.00
C's ASs	89	-.13	89	.16
C's ASIs	89	-.06	89	.30**
F's ASs	145	-.17*	145	.13
F's ASIs	145	-.13	145	.15

* Significant at the .05 level.

** Significant at the .01 level.

number and kinds of things which annoyed the Ss. Only one correlation reached significance, namely, S's annoyance score and the confidant's AS toward S. Since this is the only significant relation in ten, this result is obviously not conclusive.

To summarize, our first hypothesis stated that the interpersonal perceptions of well adjusted individuals differ from the perceptions of relatively poorly adjusted persons. Likewise, we hypothesized that well adjusted individuals are perceived differently by their fellow group members than are the less well adjusted individuals. These hypotheses were generally supported by our data.

The Relation of Assumed Similarity to Change in Adjustment

The second major question concerned the relation between interpersonal attitudes, as reflected by AS scores, and changes in adjustment. We hypothesized that individuals who are perceived as more similar by others in their group improve in adjustment, while those perceived as relatively dissimilar experience a decrement. Likewise, we expected that those who saw others as more similar would adjust more readily than individuals who perceived others to be dissimilar.

A number of methodological problems had to be considered in testing this hypothesis. Change or "growth" scores present a variety of difficulties, particularly in the personality adjustment area. First of all, our scales may not have psychologically equivalent scale intervals. Thus, a shift from a self-satisfaction score of 2 to 4 might have a different psychological meaning than a similar shift from 10 to 12. In other words, a shift on the part of a very dissatisfied individual might mean a considerable change in his life, while a shift of the same magnitude on the part of a very self-satisfied individual might mean relatively little.

More importantly, given measures which are to any extent unreliable, one must control for "regression to the mean" effects. Thus, a person who is extremely well adjusted at a particular time has less chance

of showing improvement at a later date than one who is poorly adjusted. Conversely, a person who scores very low at a first testing session will, purely on the basis of probability, tend to improve his score rather than decrease it on further testing (cf. Lord, 1956).

To control for this statistically spurious effect, Ss were matched on the basis of their Time I criterion scores. All change scores were dichotomized into those above and below the median. The Ss having the same score on the first testing were then rank ordered on the basis of their change in adjustment on a particular criterion.⁹ For each Time I score, Ss were matched by pairing the S who had improved the most since Time I with the S who had deteriorated the most. Similarly, the second most improved person was matched with the second most deteriorated. Pairs were formed as long as one score in the pair came from above the median of the total sample and the other score came from below. We thus had pairs of improved (change scores from above the median) and deteriorated Ss (change scores from below the median) who had been matched on the basis of the adjustment scores at the initial testing session. This procedure is schematized in Fig. 2. The method had one major drawback. Since we eliminated from our sample all those who could not be matched, persons with extremely high and extremely low scores at Time I were not included in this analysis.

Matched pairs analysis of variance tests¹⁰ indicated whether the AS scores obtained from S (as well as from his fellow group members) predicted which of the two

⁹ The score indicating change in adjustment was computed by subtracting the Time II score from the Time I score. Thus, the change could be in a positive or a negative direction.

¹⁰ Analogous to a matched *t*, the matched pairs analysis of variance test was the more convenient technique to use since it also allowed a check on the significance of the between-rows variance, i.e., the relation between Time I criterion scores and the AS measures. *F*-test results from all four samples were then combined by the χ^2 method.

Subject	Time I Score	Time II Score	Change Score
Jones	2	5	-3
Smith	2	4	-2
Brown	2	3	-1
Johnson	2	1	+1
Kennedy	3	6	-3
Roberts	3	5	-2
Jenkins	3	4	-1
Caldwell	3	2	+1
Davidson	3	1	+1

Improved Subject	Matched With	Deteriorated Subject
Johnson	←→	Jones
Davidson	←→	Kennedy
Caldwell	←→	Roberts

FIG. 2 Matching procedure for analysis of change in adjustment. All names are fictitious.

paired Ss would improve and which would become less well adjusted.

Table 14 shows the relations between change in adjustment and the main predictors, \overline{ASg} and \overline{ASs} . Three of the seven relations were statistically significant, two are beyond the .01 level of confidence. Just as in the patient-therapist relations, high AS toward the individual was conducive to his improving in adjustment. In addition, high AS by the individual to other members of his group aided his adjustment—a fact not found in the study on patient-therapist relations (Fiedler & Senior, 1952). This latter very likely reflects a situational difference. A patient who perceived his therapist as very similar to himself would be seeing

him as poorly adjusted. Obviously, a patient would not stay with a therapist whom he perceived in this way. The present studies dealt with nonclinical populations where a person would not necessarily be seeing himself as poorly adjusted.

Table 15 presents the relations between change in personality adjustment and AS to friend and confidant. Of these, only AS_c and Taylor Anxiety scores reached the .05 level. Since the Taylor Anxiety score correlates also with \overline{ASg} , this result is probably not due to chance.

None of the relationships between personality adjustment and friend's and confidant's AS to the subject reached significance.

To summarize, the data have shown that AS scores are predictive of some aspects of change in adjustment as well as correlates of adjustment level at a particular time. The findings suggest that the attitudes we have been dealing with are of consider-

TABLE 14
F TESTS SHOWING THE SIGNIFICANCE OF THE DIFFERENCES BETWEEN TIME I AVERAGE AS SCORES FOR Ss IMPROVED AND DETERIORATED IN ADJUSTMENT*

Index	\overline{ASg} F	\overline{ASs} F
Self-esteem	—	.07
Self-satisfaction	—	3.14**
Taylor anxiety scores	2.07*	2.33**
Sociometric status	-.05	.97
Mean esteem by others	-.06	—

* Relations in this table and in the succeeding tables were obtained by Matched Pairs Analysis described in the body of this paper.

* Significant at the .05 level of confidence.

** Significant at the .01 level of confidence.

TABLE 15
COMPARISON OF RELATIONS BETWEEN AS SCORES TO CONFIDANT AND FRIEND AND CHANGE IN ADJUSTMENT

Index	AS _c	AS _{ic}	AS _f	AS _{if}
Taylor anxiety scores	2.04*	1.00	1.27	-.47
Sociometric status	-.84	-.32	-1.49	.66
Mean esteem by others	.18	.12	.83	1.40

* Significant at the .05 level of confidence.

able importance in interpersonal relations. While the observed changes in adjustment were small in absolute terms, the fact that they emerged despite very short intervals of time indicates that these interpersonal attitudes must exercise a fairly strong influence on adjustment. The fact that the results were obtained in studies using four different samples, and in two and probably three quite disparate situations, indicates that we were dealing with fairly general effects.

DISCUSSION

This investigation studied (a) the relationship between interpersonal perception and level of personal adjustment, and (b) the hypothesis that attitudes reflected by high AS scores are conducive to favorable changes in adjustment.

Interpersonal perceptions and the individual's level of adjustment. The results bearing on the first hypothesis were in the expected direction and generally significant. The study showed that individuals having relatively close interpersonal relations with others in the group tended to be better adjusted on the various criterion measures than were more distant individuals. But contrary to prevailing theory as well as reported research (e.g., Bruner & Tagiuri, 1954; Willoughby, 1934), the correlations obtained were fairly low. A number of factors must be considered in interpreting these findings, however. The low magnitude of the correlations might be the result of inefficient measurement of interpersonal attitudes; it might be due to poor criteria of adjustment; or these correlations might reflect the true level of the relationships.

There seems to be little reason for suspecting the efficiency of AS scores. A number of studies have shown them to be very reliable indicators of relevant dimensions in interpersonal relations (Fiedler, 1958; Fiedler & Senior, 1952), and the present investigations show them sensitive to relatively small changes in personal adjustment. On the other hand, we do know from previous work (Fiedler et al., 1957) that the criteria of adjustment are independent. Thus, each index measures only one aspect of personal adjustment and is unrelated to other indices. Moreover, we were dealing with a nonclinical population from which the seriously disturbed individuals had already been eliminated. In light of this, it seems clear that the use of these measures as diagnostic indicators of adjustment is not warranted. Whether further refinement of these measures and the development of better criterion measures will yield more prom-

ising results, or whether these correlations reflect the true relationship between these interpersonal perception scores and personal adjustment is, of course, a question for further research.

Interpersonal perception and change in adjustment. The most important contribution made by this study was the identification of quasi-therapeutic interpersonal relationships. We found that Ss with high AS to others in their group ($\bar{A}\bar{S}g$) tended to become less anxious, and that those who were perceived as more similar ($\bar{A}\bar{S}s$) became not only less anxious, but more satisfied with themselves as well.

These findings are important for two reasons. First, they point to a new approach to preventive psychotherapy and to mental health programs in large military and industrial organizations where men must work under conditions which are often stressful and psychologically damaging (cf. Fiedler, 1949). Secondly, these findings suggest a new approach to understanding the psychotherapeutic process. They suggest that we look at therapeutic relations within the context of group interactions rather than from the vantage point of the therapist working intimately and intensively with his patient.

In light of the shortages of professional personnel in the mental health field, ways of supplementing the work of the psychotherapist in office practice are clearly needed. The present approach provides one potential answer by pointing up the possibility of alleviating personal maladjustment within the structure of the individual's work group. Although a great deal of work remains to be done, in broad outline the findings suggest some steps which might lead to the construction of a healthy interpersonal environment for the marginally adjusted individual, or for persons who are in a particularly stressful situation. They indicate that the individual's personal adjustment can be influenced when he is placed in a group whose members accept him (high $\bar{A}\bar{S}s$), and whom he, in turn, accepts (high $\bar{A}\bar{S}g$).

In this connection it should be noted that certain aspects of personality adjustment changed considerably over very short periods of time, and under conditions which could hardly be regarded as favorable to therapy. This suggests that adjustment, at least as we measured it, is more labile than has hitherto been supposed. If adjustment can change during an individual's short-lived membership in one group, changes are also likely to occur when he enters another group. Adjustment would then vary with the prevailing group attitudes.

While we do not, as yet, have any definitive way of favorably modifying these group attitudes, our research has shown that it is possible to influence some of the relevant quasi-therapeutic factors. First, AS is a fairly generalized personal attribute. An individual assuming a high degree of similarity to one person will tend to assume much similarity to others with whom he has comparable relationships. To some extent, therefore, we can select the

group into which a particular individual should be placed.

Secondly, our own as well as other studies has shown that acceptance or rejection is, to a large extent, related to purely ecological variables. For example, we found that college students assigned to the same room were more likely to choose each other as friends and confidants than to choose persons in neighboring rooms. Similarly, as French (1951), has reported, the individual who, almost by random methods, is assigned to leadership functions, is more likely to attain high sociometric status.

We are suggesting here that it is possible to institute a systematic attempt to reduce the anxiety or to improve the work efficiency of group members by judiciously placing them with others who are basically accepting. That this is not unrealistic has been shown by Bushard (1957) who recently reported that members of small military units can be enlisted to assist in helping one of their maladjusted fellow group members through his crises. That such within-group relationships can exert a powerful influence on the individual is further seen in two previously published case studies of a successful and an unsuccessful quasi-therapeutic relationship (Eisen, 1957). In summary, then, our findings have indicated that steps can be taken to create a therapeutic environment for individuals even while they are members of small work groups. Further work in this area will undoubtedly reveal still better methods for utilizing the group's potential for serving as a quasi-therapeutic agent.

The second major contribution of this research lies in its implications for our understanding of the process of personality change. The problem of how personality changes is a particularly crucial issue in the areas of psychotherapy and personality development. Yet, while the psychotherapist is in an ideal position intensively to observe the changes which take place in one single patient, the validity of generalizations from such data about personality change in general is limited for a number of important methodological reasons.

First, the subjects in any research on psychotherapy come from a highly selected population. This is especially true when the Ss are patients of therapists in office practice. A major portion of these come from the upper middle class which tends to see psychological difficulties as one of the natural hazards of modern life. Their friends and family generally accept, if they do not encourage, the individual's seeking treatment. In addition, patients in this social class tend to be highly verbal and introspective in contrast to individuals from the lower socioeconomic levels. These latter, according to many clinicians, are more inclined to act out their difficulties. In contrast, the samples in our studies cover a wide spectrum of individual differences. Our Ss ranged from predominantly upper middle-class college students to relatively unselected men in military organizations. The latter were, of course, drawn from all socioeconomic

levels and spanned a wide range of intelligence scores.¹¹

Secondly, it is very difficult to compare a large number of cases treated by different therapists. Therapists also generally have very strong loyalties to their own theoretical orientations which makes it difficult for them to interpret data which may be at variance with their points of view. This problem becomes particularly important when attempts are made to explain the dynamics of the therapeutic process. Therapists differ widely in accounting for the patient's movement in therapy, e.g., by interpretation of the transference relationship, or of the life style, or by bringing into the relationship accepting, permissive attitudes. Also, the therapist is enjoined by some to play the role of the stern father, by others to act contrary to how the patient expects people to behave, and by still another group to be a sounding board against which the patient may try out his feelings and ideas in a protected environment.

Our investigations suggest that these specialized attitudes are not necessary for the individual's progress toward better adjustment outside the therapist's office. The quasi-therapeutic relationship, as far as we can determine from our research, is characterized by the similarity which people see between themselves and others, i.e., by the extent to which people within a small group accept each other. This formulation comes perhaps closer to Rogers' ideas than to those of other theorists in the field.

The main question, of course, asks why these perceptions of people should affect personal adjustments. But before discussing this point it should be noted that the changes observed in this study occurred primarily on self-report measures. These are, of course, also the objective criteria used in most research on psychotherapy. Generally speaking, the therapist must rely on the patient's statements that progress is, or is not, being made. Even when the patient is asked to return for a follow-up interview, or a series of psychological tests, we are forced to rely on his introspective accounts of himself and his reactions to others. This is the case whether these reports are in the form of interview responses or whether they are elicited in disguised form by the Rorschach or TAT (e.g., Rogers, 1951; Rogers & Dymond, 1954). Reliance on this type of criterion alone is, of course, unavoidable in most clinical studies. Even if sufficient funds and professional personnel were available to conduct field investigations of patient behavior, few

¹¹ Psychologists have frequently been accused of basing their science on the white rat and the college freshman. While we did not work with white rats, we did study college freshmen. The fact that very few chi squares in the correlational analyses were significant indicates that college and military groups behaved quite similarly insofar as their reactions to group attitudes were concerned.

individuals would submit to having a social worker or a therapist interview their employers, co-workers, or relatives to assess their improvement.

While subjective indices of adjustment are thus expedient, it is obvious that they introduce biases into the definition of adjustment and therapeutic success. It is, therefore, of interest that the findings of Rogers (1952), as well as the results of our own research, tend to show shifts primarily on self-report measures rather than on ratings or evaluations made by others. This may mean that the individual does not change very much as far as his observable behavior is concerned, and that the critical changes are those which reflect his subjective feelings of well-being. It is, of course, possible that the time spans between testing sessions in our studies were too short to provide adequate information on the Ss' observable behavior. Changes may have occurred but escaped the awareness of the, after all, untrained raters. However, in the absence of empirical evidence to the contrary, we must tentatively conclude that interpersonal attitudes affect primarily the individual's subjective feelings about himself. This does not imply that psychotherapy is, for this reason, less valuable. The patient seeks therapeutic help because he feels anxious and beset by doubts about himself—not because he is disliked by others, but because he feels uncomfortable about it. It may require a considerably longer time to change others' attitudes about oneself than to change one's own attitudes about self and others.

While quasi-therapeutic and formal therapeutic relations are probably not interchangeable, they are analogous. With this in mind, we can now attempt to answer the question of why high AS is related to improvement in these aspects of adjustment. In the first place, seeing someone as similar has been shown to mean seeing him in a favorable light (Fiedler, Warrington, & Blaisdell, 1952). People perceived as similar are rated as falling nearer to the favorable poles on the various items in our questionnaires. Hence, our findings suggest that a person comes to perceive himself more favorably when he is perceived as similar, i.e., in a favorable manner, by his group (high ASs).

In essence, this finding is consistent with Festinger's (1954) theory of social comparison processes. Festinger hypothesized that "there exists, in the human organism, a drive to evaluate his opinions and his abilities" (p. 117). He postulates further that, "to the extent that objective, non-social means are not available, people evaluate their opinions and abilities by comparison respectively, with the opinions and abilities of others" (p. 118). Inasmuch as self-regarding attitudes are opinions of oneself, the theory may be applied directly to our data. Given a situation in which the individual finds that every member of his group regards him in a favorable light, he will then tend to change his opinion to conform to that of the group. Asch (1952) has shown, in fact, that individuals will tend to conform to group opinion even when deal-

ing with the evaluation of a physical stimulus, such as the length of a line. That is, many Ss will rate an actually longer line as "shorter" when all other members of the group have previously rated the line as shorter. When we deal with a highly ambiguous stimulus, such as a self concept, group opinion is much more likely to affect the individual's judgments about himself.

In a patient-therapist relationship, the patient sees the therapist as well adjusted, while the good therapist sees the patient as quite similar to himself (Fiedler & Senior, 1952). Therapy may then be seen in terms of the patient's gradual acceptance of the therapist's valuation of him. Thus, through interaction with the therapist the patient becomes more secure and more satisfied with himself. Steiner and Peters (1958) found that Ss assuming a high degree of similarity tended to exhibit greater conformity behavior. The individual who assumes a high degree of similarity should thus also be the one who more easily accepts others' attitudes regarding his own worth. Since two or more persons' opinions should have more weight than the opinion of just one, we might further hypothesize that a patient will also improve more rapidly if he deals with more than one therapist. While no systematic studies on this point have been reported, it has been noted by a number of clinicians whose patients had transferred from other therapists. This would further suggest that group therapy might be managed so as to capitalize on these effects.

Finally, our findings may shed some light on the phenomenon of patients or potential patients who improve without benefit of psychotherapy. If our data may be interpreted freely, we may well have a clue here to at least one cause of these "spontaneous remissions," namely, that the individual was able to get into a group where he could form a relationship in which he was accepted, and where he could perceive himself to be similar to others whom he considered to be well adjusted (cf. Fiedler, 1949).

In summary, it is our belief that research directed toward discovery of the day-to-day interpersonal relations which contribute to better adjustment, or which lead to spontaneous remission, holds the key to better community mental health programs and preventive psychotherapy. This investigation has shown that quasi-therapeutic relationships can be identified, and it has suggested some of the elements which contribute to change in adjustment. It is our hope that this investigation will lead to more intensive research in the future.

SUMMARY AND CONCLUSIONS

The present investigation dealt with the hypothesis that a relationship exists between interpersonal perception and the level of personal adjustment, as well as changes in adjustment.

Four groups were utilized. Two of these consisted of college students living in university dormitories and temporary housing facilities. Two further groups consisted of members of army tank crews and anti-aircraft artillery units.

Assumed Similarity (AS) scores were obtained from all Ss at two sessions, spaced from six to twelve weeks apart. The AS scores are obtained when an S describes himself, as well as a number of others in his unit, on identical personality questionnaires. Descriptions are then compared by means of the D Statistic to determine the degree of similarity or difference which S sees between himself and others.

A number of criterion indices were used for purposes of measuring personal adjustment. Previous work had shown that these adjustment indices were essentially uncor-

related, and the present investigations, therefore, treated each separately.

Results of this study indicated that AS scores, especially those indicative of the individual's feeling of closeness to the group, and the group's acceptance of the subject, are related to adjustment criteria. We found statistically significant, albeit very small, relations between AS scores and level of adjustment. Statistically significant differences in changes in adjustment were also obtained between groups of Ss paired on the basis of their level of adjustment at the first testing session.

These findings were discussed in terms of previous research in this area, as well as in terms of their implications for theories of personality and psychotherapy, and the potentiality of developing programs of preventive psychotherapy and mental health.

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(Accepted for publication March 17, 1958)

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Cooperative	:	:	:	:	:	:	:	Uncooperative
Quitting	:	:	:	:	:	:	:	Persevering
Stable	:	:	:	:	:	:	:	Unstable
Confident	:	:	:	:	:	:	:	Unsure
Seclusive	:	:	:	:	:	:	:	Sociable
Immature	:	:	:	:	:	:	:	Mature
Adventurous	:	:	:	:	:	:	:	Timid
Thankless	:	:	:	:	:	:	:	Grateful
Friendly	:	:	:	:	:	:	:	Hostile
Energetic	:	:	:	:	:	:	:	Subdued
Impatient	:	:	:	:	:	:	:	Patient
Softhearted	:	:	:	:	:	:	:	Hardhearted
Unreflectful	:	:	:	:	:	:	:	Thoughtful
Frank	:	:	:	:	:	:	:	Secretive
Meek	:	:	:	:	:	:	:	Forceful
Impulsive	:	:	:	:	:	:	:	Deliberate
Easygoing	:	:	:	:	:	:	:	Short-tempered
Practical	:	:	:	:	:	:	:	Impractical
Boastful	:	:	:	:	:	:	:	Modest
Intelligent	:	:	:	:	:	:	:	Unintelligent
Depressed	:	:	:	:	:	:	:	Cheerful
Reliable	:	:	:	:	:	:	:	Undependable
Unrealistic	:	:	:	:	:	:	:	Realistic
Much interest in opposite sex	:	:	:	:	:	:	:	Little interest in opposite sex

CONFIDENTIAL

APPENDIX B

INSTRUCTIONS AND QUESTIONNAIRES FOR
THE BARRACKS GROUPS*

People differ in the ways they think about themselves and about those who are most important to them. Please give your immediate, first reaction to the items on the following pages.

On each sheet are pairs of words which are opposite in meaning, such as *Talkative* and *Quiet*. You are asked to describe yourself and each of several people who are important to you by placing a check in one of the six spaces on the line between the two words.

Each space represents how well the adjective fits the person you are describing, as if it were written:

Talkative	_____	:	_____	:	_____	:	_____	:	_____	:	_____	Quiet
	very		quite		more		more		quite		very	
	talkative		talkative		talkative		quiet		quiet		quiet	
					than		than					
					quiet		talkative					

FOR EXAMPLE: If you were to describe yourself, and you ordinarily think of yourself as being *quite talkative*, you would put a check in the second space from the word *Talkative*, like this:

Talkative	_____	:	✓	:	_____	:	_____	:	_____	:	_____	Quiet
-----------	-------	---	---	---	-------	---	-------	---	-------	---	-------	-------

If you ordinarily think of yourself as somewhat *more quiet than talkative*, you would put your check on the quiet side of the middle.

Talkative	_____	:	_____	:	_____	:	✓	:	_____	:	_____	Quiet
-----------	-------	---	-------	---	-------	---	---	---	-------	---	-------	-------

If you would think of yourself as *very quiet*, you would use the space nearest the word *Quiet*.

Talkative	_____	:	_____	:	_____	:	_____	:	_____	:	✓	Quiet
-----------	-------	---	-------	---	-------	---	-------	---	-------	---	---	-------

Look at the words at both ends of the line before you put in your check mark. Please remember that there are no *right or wrong answers*. Work rapidly; your first answer is likely to be the best. Please do not omit any items and mark each item only once.

* Tank and anti-aircraft artillery crews were given similar instruction and identical scale sheets.

SCALE SHEET

First describe yourself as you ordinarily think about yourself.

MYSELF AS I AM

Friendly	:	:	:	:	:	Unfriendly
Cooperative	:	:	:	:	:	Uncooperative
Quits easily	:	:	:	:	:	Keeps trying
Calm	:	:	:	:	:	Upset
Confident	:	:	:	:	:	Unsure
Immature	:	:	:	:	:	Mature
Bold	:	:	:	:	:	Timid
Ungrateful	:	:	:	:	:	Grateful
Energetic	:	:	:	:	:	Tired
Impatient	:	:	:	:	:	Patient
Thoughtless	:	:	:	:	:	Thoughtful
Frank	:	:	:	:	:	Secretive
Careless	:	:	:	:	:	Careful
Easygoing	:	:	:	:	:	Quick-tempered
Practical	:	:	:	:	:	Impractical
Boastful	:	:	:	:	:	Modest
Intelligent	:	:	:	:	:	Unintelligent
Gloomy	:	:	:	:	:	Cheerful
Responsible	:	:	:	:	:	Undependable
Efficient	:	:	:	:	:	Inefficient

SCALE SHEET

Now describe yourself as you would most like to be.

MYSELF AS I WOULD MOST LIKE TO BE

How we think of others is important also. On this sheet describe your roommate.

HIS NAME _____

On this sheet describe one of the other two people in your suite.

HIS NAME _____

On this sheet describe the last member of your suite.

HIS NAME _____

If you had a personal problem which you wanted to talk over with someone, to whom in your own or a neighboring building would you most likely go?

HIS NAME _____

Now describe this person, unless you already have.

Does anyone in the building come to you with his problems? If so, will you name and describe this person?

HIS NAME _____

How we think of our co-workers is also important. Think of someone with whom you have been able to work *best*; a man with whom you might get a job done easily and well, and describe him on this form. This may be someone you have known in the past, or someone you know now.

Everybody can work better with some people than with others. Think of someone with whom you have been able to work *least well*, a man with whom you might have difficulty in doing a job. Describe him.

What other people think of us is also important. Try to describe yourself as others in your building probably see you.

MYSELF AS OTHERS IN MY BUILDING PROBABLY SEE ME

